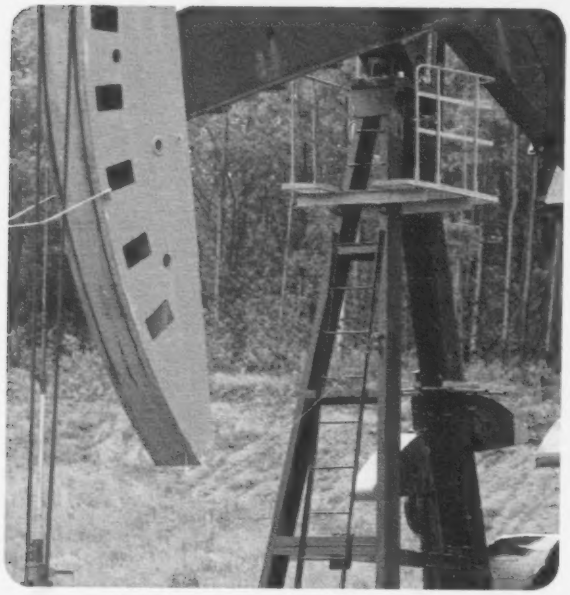
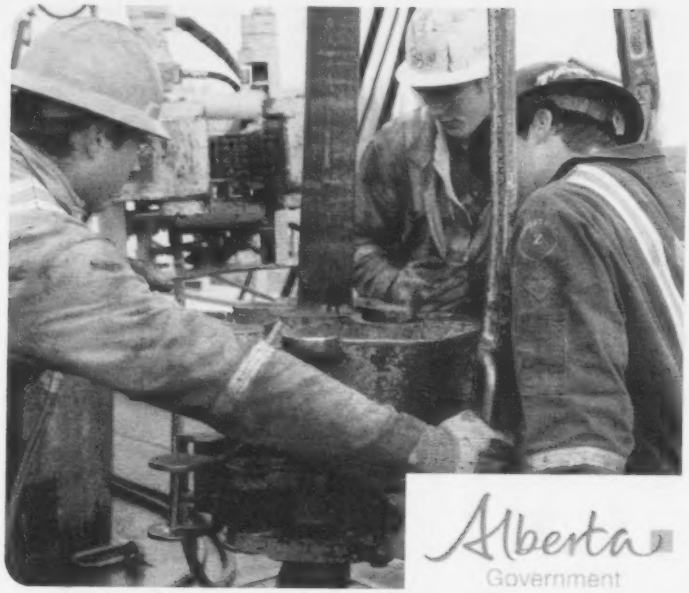
ALBERTA OIL & GAS INDUSTRY QUARTERLY UPDATE

SUMMER 2013

Reporting on the period: Mar. 29, 2013, to Jun. 27, 2013



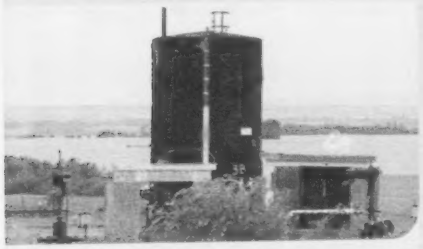


Alberta Government

All about oil and gas*

Technology is setting the stage for another boom in Alberta's non-oil sands oil and natural gas industry. Until the last few years, the sun had slowly been setting on Alberta's conventional oil and natural gas industry. Oil production had declined from a peak of 1.43 million barrels a day in 1973 to a low of around 460,000 barrels per day in 2010.

But things are changing for the better, as increased implementation of long horizontal wells and multistage fracturing in tight oil plays across the province—not to mention new provincial royalty incentives to encourage drilling—has crude oil drilling activity and production on the upswing. Although natural gas activity has slowed due to weak prices, Alberta is poised to benefit once a price correction occurs.



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In fact, the tight oil revolution that began in the United States and gradually moved north into Alberta marks the dawning of a new day for oil and natural gas exploration and production in the province.

In Alberta, the new technology is being used in an increasing number of oil plays. Among the most advanced plays are the Cardium in west-central Alberta, the Beaverhill Lake Carbonates near Swan Hills, the Viking in east-central Alberta and at Red Water north of Edmonton, in the Pemiscot at Princess in southern Alberta, and at Judy Creek in northwestern Alberta. Additionally, emerging plays include the Alberta Bakken in the southern reaches of the province, and in oil windows in the Duvernay and Montney shale.

High drilling activity in these areas will offset the steep decline in Alberta conventional production that would otherwise be expected.

In 2012, 2,854 successful oil wells were drilled, a decrease of 10.2 per cent from 2011. The number of new wells placed on production for 2012 was 3,107. From this total, 2,379 new horizontal oil wells (including those using multistage fracturing technology) were brought on production in 2012, an increase of 31 per cent from the 2011 level of 1,818 horizontal wells. This raises the total number of horizontal wells to 9,664.

The number of new vertical oil wells placed on production is projected to be 728 in 2013 and is expected to decline to 520 wells in 2022. This well count is about 50 per cent lower than last year's forecast and reflects the view that many new wells will be horizontal wells, with many of those using multistage fracturing technology.

The number of new horizontal oil wells is projected to decrease from 2,379 in 2012 to 2,310 in 2013, and to decline gradually to 2,080 in 2022. The forecast number of horizontal oil wells has significantly increased relative to last year's forecast and reflects actual activity in 2012, industry's projection of increased horizontal drillings and anticipated continued strong crude oil prices.

The number of new natural gas well connections dropped significantly in 2012 and has not been this low since 1992. In 2012, 1,189 new conventional natural gas connections were placed on production in the province, a decrease of 49 per cent from 2011. This is the sixth straight year of reductions in conventional gas connections.

The number of horizontal gas wells drilled and connected in the province is increasing as a percentage of the total. In 2012, about 53 per cent of new gas connections were horizontal wells compared with 25 per cent in 2011 based on the revised well connection counts.

The numbers of new conventional gas connections over the forecast period are projected to be 1,100 in 2013 and gradually increase to 1,425 by 2022. The forecast number of connections is significantly lower than last year's forecast of 3,800 largely due to the shift from vertical and directional wells to more capital-intensive, but highly productive, horizontal wells.

Although low natural gas prices have reduced drilling activity in Alberta for that commodity the past few years, when prices rebound the province will be well positioned to capitalize.

Canada is the third-largest natural gas producer in the world, with about 80 per cent of the country's gas being produced in Alberta. According to provincial figures, at the end of 2012, remaining established reserves of conventional natural gas stood at 33 trillion cubic feet, while remaining established coalbed methane (CBM) gas reserves stood at 2.4 trillion cubic feet. The province estimates the remaining ultimate potential of marketable conventional natural gas at 74 trillion cubic feet.

Although conventional natural gas remains a very important part of Alberta's natural gas supply, horizontal drilling and multistage fracturing now allow for development of natural gas from a new source—unconventional natural gas resources. Aside from CBM, Alberta's unconventional natural gas resources include tight gas (natural gas trapped in low-permeability sedimentary rocks, such as sandstone or limestone) and shale gas (trapped in shale rock). ■

*This publication contains information about Alberta's oil and gas industry, excluding oil sands. For information on the oil sands, please refer to the Alberta Oil Sands Industry Quarterly Update on this website.

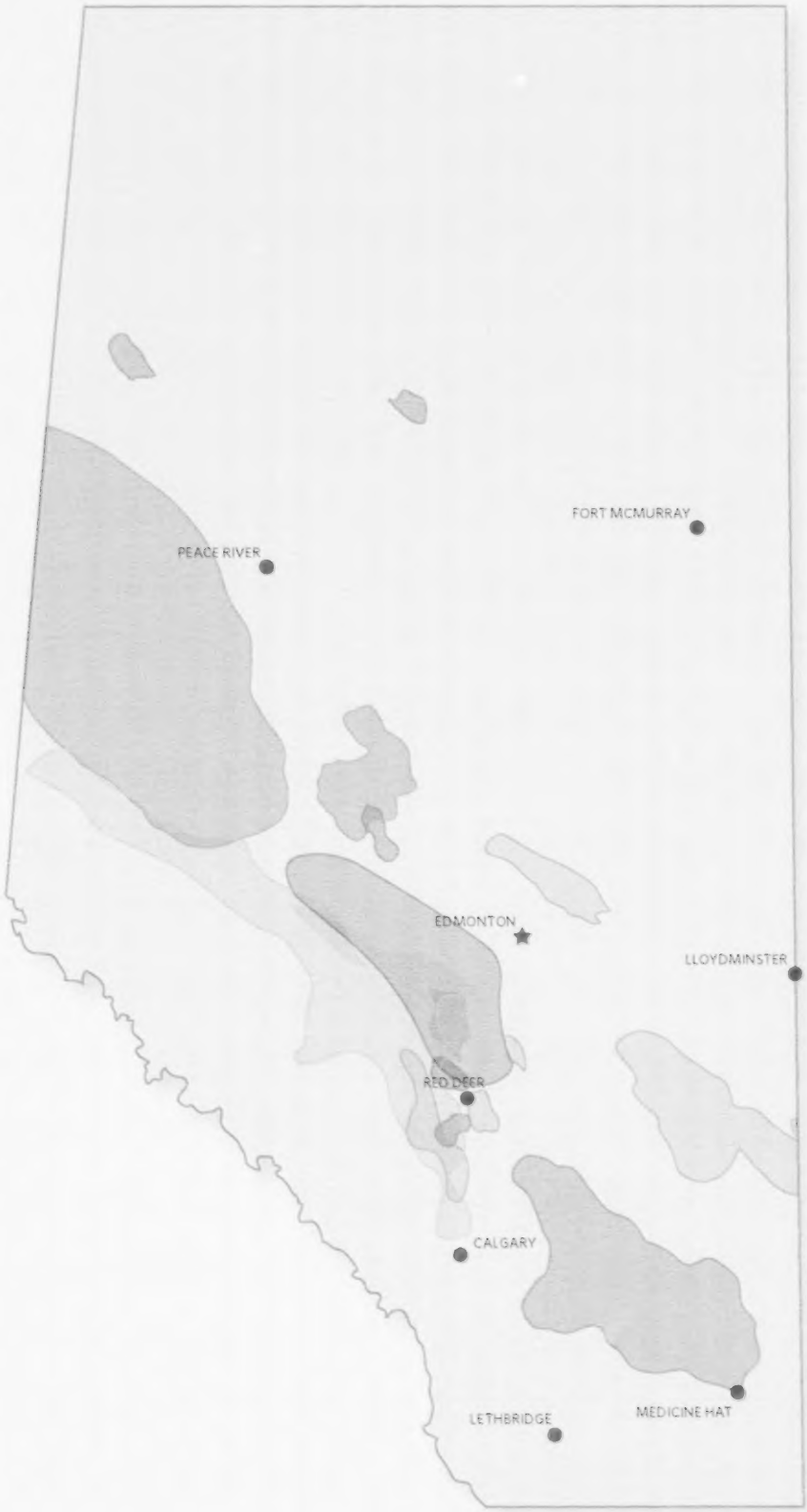
Oil plays

The Alberta Energy Resources Conservation Board (ERCB) estimates the remaining established reserves of conventional crude oil in Alberta to be 1.7 billion barrels, representing about one-third of Canada's remaining conventional reserves.

This is a year-over-year increase of 9.5 per cent, resulting from production, reserves adjustments and additions from drilling that occurred during 2011.

In 1994, based on the geological prospects at that time, the ERCB estimated the ultimate potential of conventional crude oil to be 19.7 billion barrels. Given recent reserve growth in low permeability, or tight oil plays, the ERCB believes that this estimate may be low.

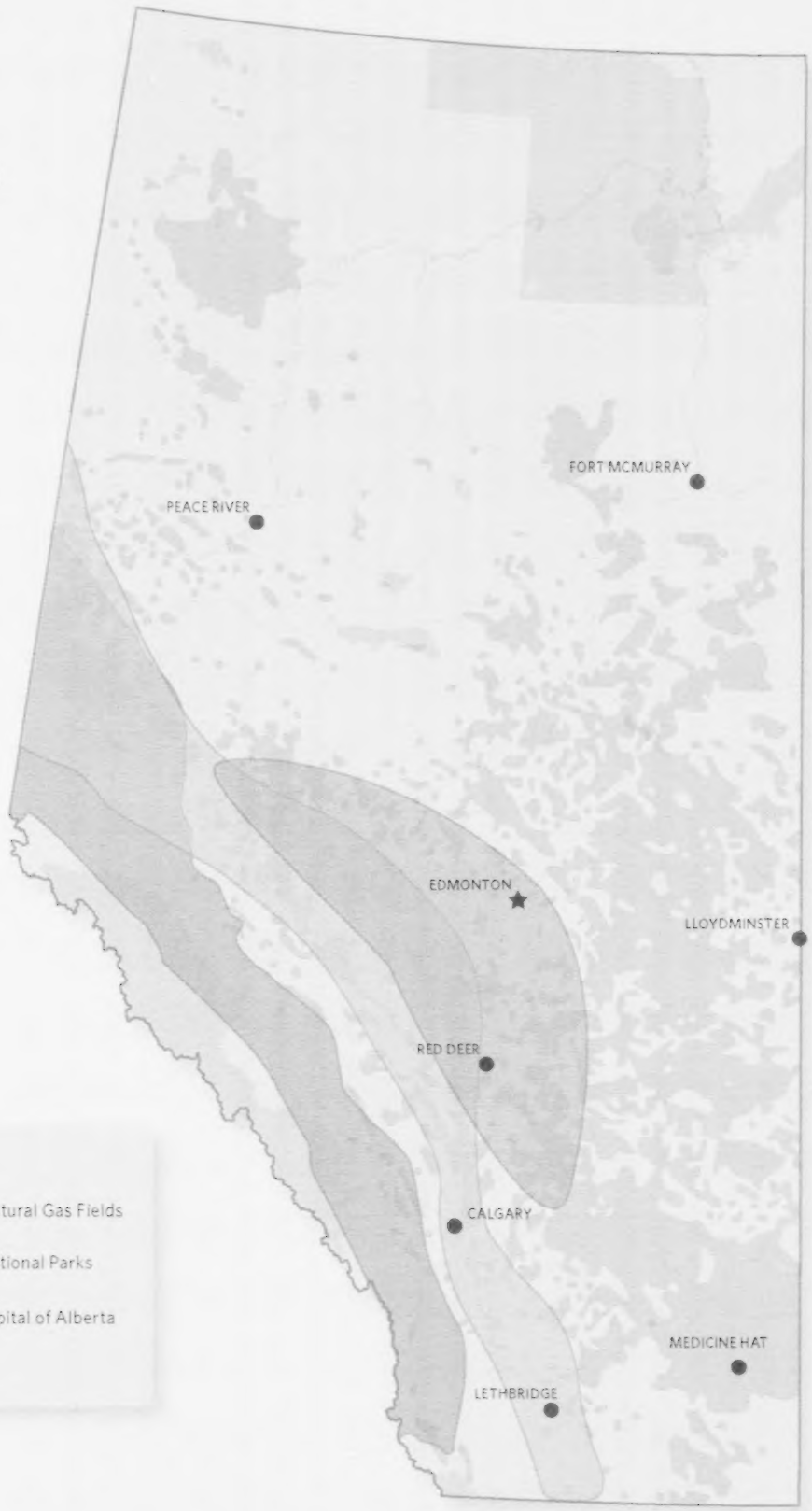
Starting in 2010, total crude oil production in Alberta reversed the downward trend that was the norm since the early 1970s. In 2010 and 2011, light-medium crude oil production began to increase as a result of increased, mainly horizontal, drilling activity with the introduction of multistage hydraulic fracturing technology. The successful application of this technology and increased drilling resulted in total crude oil production increasing by seven per cent in 2011. Alberta's production of conventional crude oil totalled 179 million barrels in 2011.



Natural gas plays

Alberta's natural gas bounty is plentiful and is produced from both conventional and unconventional reserves. While the vast majority of the province's natural gas is still produced from conventional sources, growing natural gas volumes from coal, shale and tight formations will also be strong contributors going forward.

Alberta has a large natural gas resource base, with remaining established reserves of about 33 trillion cubic feet and estimated potential of up to 500 trillion cubic feet of natural gas from the coalbed methane resource. In addition, a large-scale resource assessment of shale gas potential in Alberta is underway and could significantly add to the natural gas prospects for the province.



GOVERNMENT UPDATE

ERCB RELEASES HYDRAULIC FRACTURING DIRECTIVE

The Energy Resources Conservation Board (ERCB) has issued Directive 083: Hydraulic Fracturing – Subsurface Integrity following a two-month stakeholder consultation period.

The release of Directive 083 represents a notable enhancement to existing regulatory oversight and monitoring as resource development continues and technology adapts.

The ERCB received significant feedback on the draft hydraulic fracturing directive following its issuance on Dec. 6, 2012, through to the close of the feedback on Feb. 4, 2013.

Further modifications were made to Directive 083 based on stakeholder feedback. Some of these modifications include:

- Additional requirements for wellbore integrity, design and testing, including the option for single- and dual-barrier design.
- Conduct comprehensive risk assessments related to interwellbore communication and non-saline aquifers prior to the start of hydraulic fracturing operations.
- Conduct modelling prior to hydraulic fracturing operations to reduce the likelihood of interwellbore communication and prevent non-saline aquifers from being adversely affected.

Industry will be required to adhere to all regulatory changes and additions when the directive comes into effect in August 2013.

NEB ONSHORE PIPELINE REGULATIONS STRENGTHENED

National Energy Board's (NEB's) Regulations Amending the Onshore Pipeline Regulations, 1999 were published in the *Canada Gazette*, Part II.

The regulations clarify requirements for federally regulated pipelines regarding management systems for the purpose of protecting the public, the workers and the environment.

The NEB requires pipeline companies to anticipate, prevent, manage and mitigate potentially dangerous conditions associated with their pipelines. When implemented, these requirements can effectively manage risk and promote safe pipeline operation.

The regulations make it clear that management systems must apply to the key company programs for safety, pipeline integrity, security, environmental protection and emergency management. Also, the regulations require that management systems must be in place throughout each phase of the life cycle of the pipeline—from design, materials, construction, operation and all the way through to abandonment.

The regulations include provisions that focus on a company's senior leadership for accountability of its management systems, the company's safety culture and the achievement of outcomes related to safety of the public and environmental protection. Furthermore, companies must have an internal reporting policy that will encourage employees to bring forward, without fear of reprisals, the hazards and risks that they may encounter during their work activities.

Alberta Government

CEO OF NEW ENERGY REGULATOR NAMED

Chief executive officer Jim Ellis will be responsible for the operations of the new Alberta Energy Regulator, joining recently named board chair Gerry Protti on the leadership team.

As chair of the board of directors, Protti will be responsible for setting the general direction of the regulator's business and affairs. As chief executive officer, Ellis will handle the day-to-day operations of the province-wide regulator with nearly 1,000 staff and a $200-million budget.

Ellis has served as deputy minister of the provincial energy and environment departments, and led work on regional land planning, cumulative effects management, regulatory enhancement and responsible development policy. Most recently, he was the lead Alberta official on the Canadian Energy Strategy.

The Alberta Energy Regulator will be responsible for regulating the province's upstream oil, oil sands, natural gas and coal development. With a mandate to provide for the efficient, safe, orderly and environmentally responsible development of energy resources, the Alberta Energy Regulator will be responsible for regulating the life cycle of an energy project from application and construction to production, abandonment and reclamation. It will begin phasing in operations this June. ➤

Government update *continued*

ERCB REPORT INDICATES LARGEST CONVENTIONAL CRUDE OIL PRODUCTION AND RESERVES INCREASE IN DECADES

The latest edition of the Energy Resources Conservation Board (ERCB) publication *ST98-2013 Alberta's Energy Reserves 2012 and Supply/Demand Outlook 2013-2022*, shows a 14 per cent increase in production and 9.5 per cent increase in reserves over 2011 levels.

In 2012, Alberta's crude oil production totalled 556,000 barrels of oil per day with a yearly total of 204 million barrels. This increase is due to the higher production rates of horizontal wells.

In 2012, Alberta produced 1.9 million barrels per day of raw crude bitumen from the oil sands for a yearly total of 704 million barrels, or a 10 per cent increase over Alberta's 2011 crude bitumen production.

The ERCB forecasts that Alberta's annual raw crude bitumen production will total 3.8 million barrels per day for a total of 1.39 billion barrels per year in 2022.

The report notes that, since 1967, Alberta has produced about 8.8 billion barrels of raw crude bitumen from the oil sands and about 16.7 billion barrels of crude oil since 1914.

Other report highlights include:

- Alberta's total remaining established crude bitumen and crude oil reserves stood at 169.6 billion barrels, consisting of 167.9 billion barrels of crude bitumen and 1.7 billion barrels of crude oil;
- Remaining established marketable conventional gas reserves stood at 33 trillion cubic feet, a decrease of three per cent from 2011; and
- Remaining established reserves of natural gas liquids stood at 1.6 billion barrels, down one per cent from 2011.

This report is available at www.aer.ca.

NEB EXPECTS A HOLDING PATTERN FOR CANADA'S NATURAL GAS PRODUCERS

The National Energy Board (NEB) released its natural gas deliverability energy market assessment indicating that Canadian natural gas producers are undertaking minimal natural gas drilling activity as current prices do not cover the full costs of developing most natural gas prospects.

In the report, *Short-term Canadian Natural Gas Deliverability 2013-2015*, the NEB examines trends for natural gas deliverability in Canada (the ability to produce natural gas from new and existing wells). The three key supply and demand drivers influencing future Canadian natural gas deliverability include:

- Minimal drilling activity because prices do not cover the costs of developing most natural gas prospects.
- Growth in natural gas as a by-product from developing oil- and natural gas liquids (NGL)-rich prospects.
- Producers are not earning sufficient returns to attract additional equity investment with current prices of around $3 per million British thermal units in western Canada.

This report includes low-, mid- and high-range price cases for natural gas based on varying market factors. A mid-range price case would see moderate growth in North American natural gas demand, coupled with declining Canadian natural gas deliverability and slowing U.S. supply growth, gradually reducing excess deliverability in North American natural gas markets.

The board projects that annual Canadian natural gas prices could be $3.60 per gigajoule by 2015, sustain drilling for NGL-rich gas and incent the beginnings of some return to dry gas drilling. Canadian natural gas deliverability would fall to 12.5 billion cubic feet per day by 2015, down from 14 billion cubic feet in 2012.

LEGISLATION SUPPORTS GREATER INVOLVEMENT FOR FIRST NATIONS IN CONSULTATION PROCESS

Alberta First Nations will be better supported in the planning process to develop the province's natural resources through new enabling legislation introduced in the Alberta Legislature.

Bill 22, the Aboriginal Consultation Levy Act, introduced by Aboriginal Relations Minister Robin Campbell, supports an improved consultation process by building capacity for First Nations so they can be more engaged in the process, which will benefit First Nations and all Albertans.

Highlights of the proposed legislation:

- The proposed consultation levy would be paid by proponents for resource development projects and land management activities.
- The amounts received from the industry through the levy would go into a fund for covering First Nations' consultation costs. It would be revenue neutral to the government. The Crown may also pay into the fund.
- The proposed legislation would enable government to create an information disclosure mechanism that would result in the public knowing how much money is being invested into consultation activities in the province.
- Bill 22 would also require an annual report summarizing the operation of the fund, including audited financial statements. ■

What's new in the oil and gas industry

LED BY ALBERTA, CANADIAN OIL PRODUCTION TO KEEP RISING

In its annual crude forecast released June 10, the Canadian Association of Petroleum Producers (CAPP) predicted that Canadian oil production will more than double to 6.7 million barrels per day by 2030, from 3.2 million barrels per day in 2012.

This includes Alberta oil sands production of 5.2 million barrels per day by 2030, up from 1.8 million barrels per day in 2012.

While the overall trend is similar to last year's forecast, the notable differences include an increase in total production of 500,000 barrels per day by 2030, the industry group stated. The increase includes incremental conventional production of 300,000 barrels per day by 2030 and oil sands production of 200,000 barrels per day by 2030. This year's forecast also includes a progressive shift toward more supply from oil sands in situ production.

"Stronger performance for conventional tight oil in Canada and the United States, coupled with oil sands growth from Canada, enables greater North American energy security," says Greg Stringham, CAPP vice-president, markets and oil sands. "It creates further opportunities to replace foreign crude oil imports in both Canada and the United States, and to increase exports to new markets beyond North America."

Oil sands production growth reflects Canada's supply potential and the growing international demand for oil. In 2012, 1.8 million barrels per day were produced, including 800,000 barrels per day from mining operations and one million barrels per day from in situ operations. By 2030, in situ production is forecast at 3.5 million barrels per day and mining production is forecast at 1.7 million barrels per day.

Conventional tight oil production is increasing because new technology allows industry to produce oil from formerly uneconomic resources, reversing a significant declining production trend over the last decade. Production was 1.2 million barrels per day in 2012. It is expected to rise to 1.4 million barrels per day by 2015 and remain at about that level throughout the forecast period.

ALBERTA GENERATES $13.21 MILLION AT ITS JUNE 9 LAND SALE

The average price of $215.08 per hectare was the second-lowest of the calendar year so far. The province sold a total of 61,408 hectares at the land sale. Year-to-date, industry has spent $403.47 million in the province to tie up 1.16 million hectares, which has generated an average price of $347.87 per hectare.

To the same point of 2012, $589.73 million had rolled into Alberta coffers on 1.35 million hectares at an average price of $437.40 per hectare.

Highlights of the sale included a bonus high bid of $2.26 million successfully submitted by Vertex for a 2,048-hectare licence in northwestern Alberta, south of Grande Prairie. The broker paid an average of $1,102.88 per hectare for the sections. The parcel included all rights.

Scott Land & Lease Ltd. paid a bonus of $1.3 million for an adjacent 256-hectare parcel. The single-section licence produced an average price of $5,081.96 per hectare and included rights below the base of the Charlie Lake formation.

Further south, and just north of Grande Cache, Alta., Seven Generations Energy Ltd. acquired a 1,792-hectare licence for $1.99 million.

PROPOSAL TO SHIP CRUDE OIL EAST IS WELCOMED

There may be some detractors but, generally, TransCanada Corporation's proposal to ship crude oil from western Canada to New Brunswick has been welcomed, says Alberta's premier.

Speaking recently to reporters from Fredericton, Premier Alison Redford said she had addressed the issue in New Brunswick's legislature that morning.

"All political parties in the legislature support this project and this proposition, so there's great support for that," said Redford. "From everything Premier [David] Alward has talked to me about, there is tremendous community consensus on this because there is a real appreciation for what it means in terms of economic growth."

Redford said TransCanada is currently holding an open season to solicit shippers and volumes for the proposed Energy East Pipeline that could supply the Irving Oil refinery in Saint John, N.B., as well as refineries in Montréal and Québec City.

"We expect to see the conclusion of that process by mid-June, and we're very optimistic that we're going to see something that's quite economically viable and see the next step be taken, which would be an application for a regulatory approval," said Redford.

The proposed project involves converting approximately 3,000 kilometres of TransCanada's existing Canadian Mainline natural gas to crude oil service and constructing up to approximately 1,400 kilometres of new pipeline. ➤

Subject to the results of the open season that closed June 17, it would transport up to 850,000 barrels of oil per day to provide eastern Canadian refineries with growing oil production from the west that would replace more expensive crude imports.

GLOBAL PETROLEUM SHOW TO BE HELD ANNUALLY

The Global Petroleum Show (GPS), held in Calgary every two years since 1968, will now be held on an annual basis, organizer dmg :: events (Canada) Inc. said June 12.

The Calgary-based event broke records in 2012, welcoming 63,000 registered attendees from 100 countries, and 2,000 exhibiting companies in the oil and gas industry showcasing the latest technologies, products and services.

"This is an important evolution for the industry, for Canada and for Calgary," Wes Scott, executive vice-president of dmg :: events, said.

"Since 1968, Global Petroleum Show has been a major platform for international and local markets to conduct business face to face," he said. "The annualization of Global Petroleum Show offers more opportunities to connect the industry and explore the latest developments and innovations facing the global sector."

The annualization of GPS responds to attendee and exhibitor demand for annual access to emerging markets, the latest technologies and collaboration with industry experts. Market research showed that 75 per cent of attendees polled would participate in GPS on an annual basis.

Show organizers expect the 2014 edition, which will take place June 10-12, to surpass attendance numbers from 2012 and be the largest GPS to date.

The annualization of GPS also marks the end of the Gas & Oil Expo, which is currently taking place this week at Calgary's Stampede Park. The biennial exposition, which is held in the off year of GPS and is also produced by dmg :: events, will be re-evaluated for future consideration in the Canadian market.

ALBERTA CONTINUES TO EYE WEST COAST GAS EXPORTS

The Alberta government will be taking steps to encourage west coast liquefied natural gas (LNG) development even as it looks at how natural gas liquids could be made available for Alberta petrochemical producers, says a senior government bureaucrat.

"We are going to be very aggressive in the next couple of years at putting in programs and policies to facilitate and catalyze LNG development into the west coast," Justin Riemer, assistant deputy minister, economic competitiveness division, Alberta Enterprise and Advanced Education, told a recent petrochemical conference.

"We want to make sure we are doing this with Canada's strategic interests in mind, not just isolated particular geographic interests," he said in response to a question during an executive panel discussion at the Canadian Energy Research Institute conference in Kananaskis, Alta.

"There are a number of ideas around the natural gas assets, really viewing natural gas assets as the western Canadian basin's and how we strategically time the evolution of the development of LNG to the benefit of Alberta, British Columbia and Canada," said Riemer. "It's something we're talking more and more about."

ENCANA REPORTS LOWER GHG EMISSIONS

Calgary-based Encana Corporation's greenhouse gas emissions fell last year to 4.29 million tonnes (2.85 million tonnes in Canada and 1.44 million tonnes in the United States) from 5.45 million tonnes in 2011 and 5.24 million tonnes in 2010, according to the company's annual corporate responsibility report.

The report, prepared by the company's corporate responsibility team, found direct carbon intensity decreased in 2012 compared to 2011 due to greater reductions in fuel, flaring and venting emissions compared to reductions in production volume.

The company's gas production decreased to 2.98 billion cubic feet per day in 2012 from 3.33 billion cubic feet in 2011, while oil and natural gas liquids production climbed to 31,000 barrels per day in 2012, from 24,000 barrels in 2011.

Total gas flared in Canada declined to 34.66 million cubic metres from 50.1 million cubic metres in 2011 and 51.89 million cubic metres in 2010, while total gas vented in Canada climbed to 3.18 million cubic metres compared to 2.74 million cubic metres in 2011, but fell from 4.49 million cubic metres in 2010, according to the report.

Production energy intensity in the Canadian division decreased in 2012 to 1.86 gigajoule per cubic metre of oil equivalent, compared to 2.03 gigajoule per cubic metre of oil equivalent, due to greater reductions in fuel and flare volumes and electrical consumption compared to reductions in production volume, it said.

Production carbon intensity also decreased in 2012 (to 0.16 tonnes per cubic metre of oil equivalent) compared to the year before (0.09 tonnes) due to greater reductions in fuel, flaring, venting and purchased electricity emissions compared to reductions in production volume. ■

TECHNOLOGY

UPDATE

TECHNOLOGY IS KEY GOING FORWARD

It is crucial that the Canadian oilpatch cut costs while boosting output, and technology is the way to do it, said veteran oilman Rick George in a keynote speech to the Society of Petroleum Engineers heavy oil conference in Calgary on June 11.

"We do have a productivity and a cost issue in this country and in this industry. And we tend to just accept it. I think, to be honest with you, we've got to stop that," said the retired chief executive officer of Suncor Energy Inc., who was recently appointed chairman of Penn West Petroleum Ltd.

If the oil and gas sector continues to see rising costs, the options for maintaining investor confidence, maintaining margins and improving technology will be "vastly reduced," George said.

While a lot of oil and gas innovation happens within very small companies, contractors, suppliers and universities also have a role, George said.

"For the next decade or two, just expect a lot of change. The future, I think, is actually quite bright," he predicted.

He noted innovation is occurring in the use of solvents, surfactants and electromagnetic technology, as well as longer wells and bigger fracs.

DIFFERENT COMPLETION TECHNOLOGY PAYING OFF

When Delphi Energy Corp. drilled its first three Montney wells at East Bigstone, it used conventional completion technology with small (20-to-30-tonne) fracs.

Although among the best in that area of northwestern Alberta, the wells are characterized by higher initial decline rates that stabilize very quickly, with rates of return in the low single digits to low 20s and three- to four-year payouts.

"We took a look around and we really decided that we thought we could do better," says David Reid, president and chief executive officer. "We knew what the rock was like, we knew what the fluids were like and we needed to find a different fluid completion technique to open up and stimulate this rock properly."

For its next two wells, Delphi switched from gelled oil fracs to slickwater fracs, which involve pumping very low-viscosity water into the formation at a very high rate, creating fractures in all directions.

The move is already paying off, not only in terms of a shallower decline rate, but also with increased condensate production that attracts a premium over the Edmonton reference price for oil, a Society of Petroleum Engineers heavy oil conference heard.

"The whole objective here was not necessarily to increase initial production rates, it was all about initial decline profiles," he says. "A shallower initial decline will get more gas out faster and result in a shorter payout while the net present value of reserves goes up significantly."

PTAC'S ROLE CONTINUES TO GROW

Thirty years ago, when Soheil Asgarpour was graduating from university, a professor warned him against a career in the oil and gas industry, lest reserves run out before his career was over.

But now that Canada has been recognized as holding one of the largest hydrocarbon deposits in the world with enough oil and gas to take his grandchildren's grandchildren to retirement, the industry's challenge is no longer deposits, Asgarpour told the recent Petroleum Technology Alliance Canada (PTAC) annual general meeting.

"Our challenge is to find technological solutions and use innovation to reduce costs, reduce environmental footprints, minimize the negative social impacts of our development and make sure that these activities are profitable for our industry," PTAC's president told the meeting, which was held in Calgary.

"I think innovation and collaboration will enable us to do this job. We are working in a resource industry that is now driven more by technology than resources, and collaboration plays a major role."

PTAC's collaborative model was launched in 2010. The next year, it facilitated a record number of projects, tripling the amount of the previous year, and in 2012 the number of projects rose to five times the level seen in 2010, he said.

This year, the organization will facilitate 73 research and development projects, engage in new technology areas and sign a memorandum of understanding with several companies, said Asgarpour. ■

LABOUR UPDATE

LABOUR MARKET INFORMATION

Alberta's seasonally adjusted unemployment rate was 4.8 per cent in May 2013, up 0.4 percentage points from April and up 0.3 percentage points from the same month last year.

This rate was the second lowest in Canada, behind Saskatchewan's 4.5 per cent. The national rate was 7.1 per cent, down 0.1 percentage points from the previous month. The unemployment rate increased because labour force increased by 31,400 people and employment increased by 18,600 from April to May 2013.

Seasonally adjusted employment in the forestry, fishing, mining, and oil and gas industry decreased by 4,300 from April to May of 2013.

CHANGES TO THE ALBERTA IMMIGRANT NOMINEE PROGRAM

The Alberta Immigrant Nominee Program (AINP) has implemented a short-term initiative to assist Alberta employers in the trucking industry to meet their labour needs.

Under the 2013 Heavy Haul Initiative, the existing trucking industry category will be temporarily expanded to include heavy-haul drivers servicing all industries in Alberta. Long-haul drivers continue to be eligible under this initiative. Please visit www.albertacanada.com/immigration/immigrating/ainp-news.aspx for more information.

The Alberta Work Experience category is a new initiative under the recruitment stream of the AINP. This category will allow pathways to permanent residency for temporary foreign workers with significant Alberta work experience who are filling permanent, full-time positions in selected in-demand occupations.

Stay tuned to www.albertacanada.com/immigration/immigrating/ainp-news.aspx for more details and announcements to come.

Effective immediately, the AINP has also permanently reduced the number of years of work experience a candidate needs to qualify to apply for the manufacturing industry, semi-skilled worker category.

Candidates are now eligible to apply if they have two years of work experience in a job similar to their Alberta employer's type of business. At least one year of the work experience must have been obtained in Canada. Please visit www.albertacanada.com/immigration/immigrating/ainp-eds-semi-skilled-criteria.aspx for more information.

LABOUR NEEDS TO INCREASE

The oil and gas industry's severe labour and skills shortages of 2007 are expected to return by 2014 when the unemployment rate falls to around five per cent, says the Petroleum Human Resources Council of Canada (PHRCC), which projects shortages will persist until at least 2022.

The industry will add between 18,300 jobs and 38,700 jobs over the next decade, according to a report released recently by the PHRCC.

The report, *The Decade Ahead: Labour Market Outlook to 2022 for Canada's Oil and Gas Industry*, considers two potential scenarios:

- Low growth: market diversification does not occur, and industry growth is driven by North American demand for oil and natural gas from industrial uses, power generation and transportation.
- Expansion: market diversification occurs and Canadian oil and gas producers supply international markets. A debottleneck and expansion of oil pipeline capacity will contribute to industry growth, as will the development of liquefied natural gas export facilities and associated pipelines.

Regardless of the scenario, the industry will experience a tight labour market for the following occupations, says the report:

- Engineers: project, mining electrical/instrumentation, chemical, mechanical, petroleum and civil;
- Mechanical and instrumentation engineering technologists, drafting technologists and technicians;
- Environmental and non-destructive testers and inspection technicians;
- Power engineers (steam-ticket operators);
- Drilling coordinators/production managers;
- Oil and gas field workers, labourers and operators; and
- Trades: instrumentation technicians, heavy-duty equipment mechanics, welders, insulators, crane operators, millwrights and machinists, steamfitters and pipefitters.

Over the next decade, total hiring for direct oil and gas jobs ranges between 125,000 and 150,000 due to industry activity, age-related attrition and non-retirement turnover, says the report.

CONTACT US:

If you have questions, concerns or require more information, contact us at EAE.findlabour@gov.ab.ca. ■

Oil and gas statistics

DRILLING RIG COUNT BY PROVINCE/TERRITORY

Western Canada, Jun.11, 2013

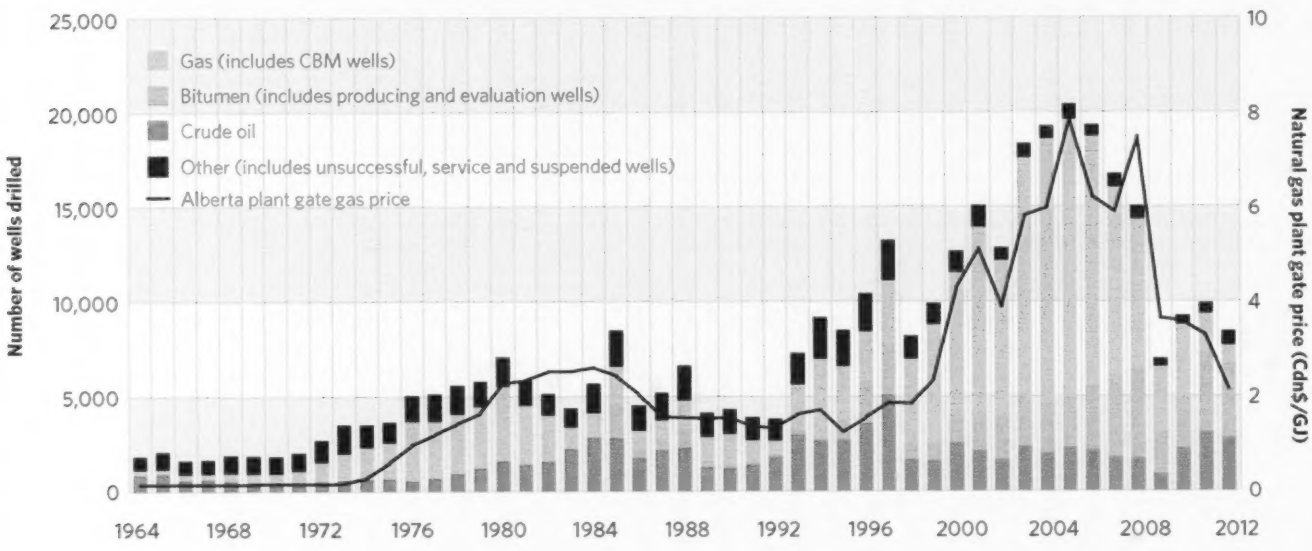
	ACTIVE	DOWN	TOTAL	ACTIVE
Western Canada				(Per cent of total)
Alberta	134	462	**596**	22%
British Columbia	23	33	**56**	41%
Manitoba	7	14	**21**	33%
Saskatchewan	41	87	**128**	32%
WC Total	**205**	**596**	**801**	**26%**
Yukon	1	0	**1**	100%

OIL & GAS WELL COMPLETIONS BY PROVINCE/TERRITORY

Western Canada, May 2013

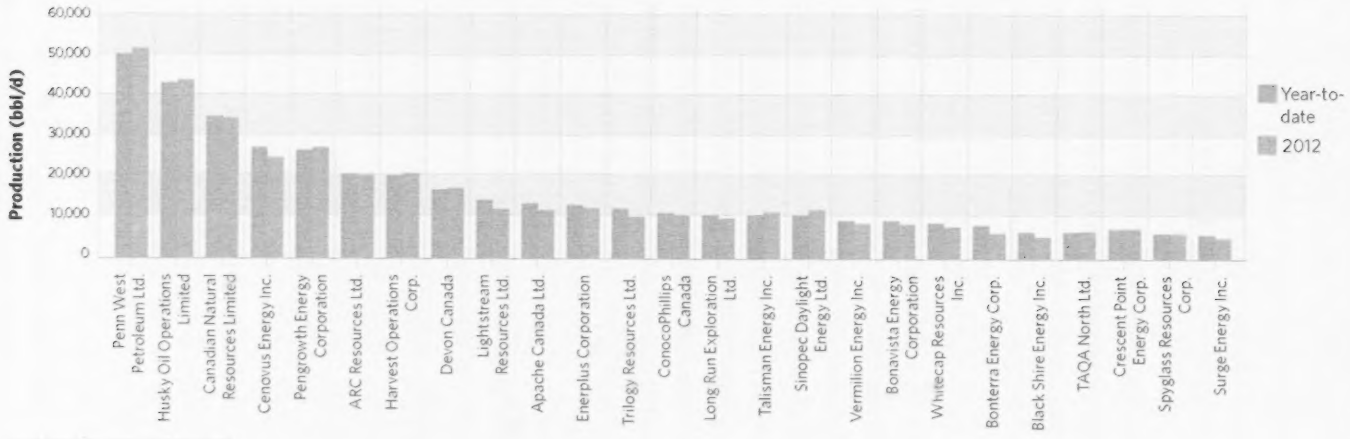
	OIL WELLS		GAS WELLS	
Western Canada	**May 2012**	**May 2013**	**May 2012**	**May 2013**
Alberta	295	230	63	47
British Columbia	6	8	69	32
Manitoba	18	3	0	0
Saskatchewan	83	16	0	0
Total	**402**	**257**	**132**	**79**

DRILLING ACTIVITY IN ALBERTA, 1964 - 2012



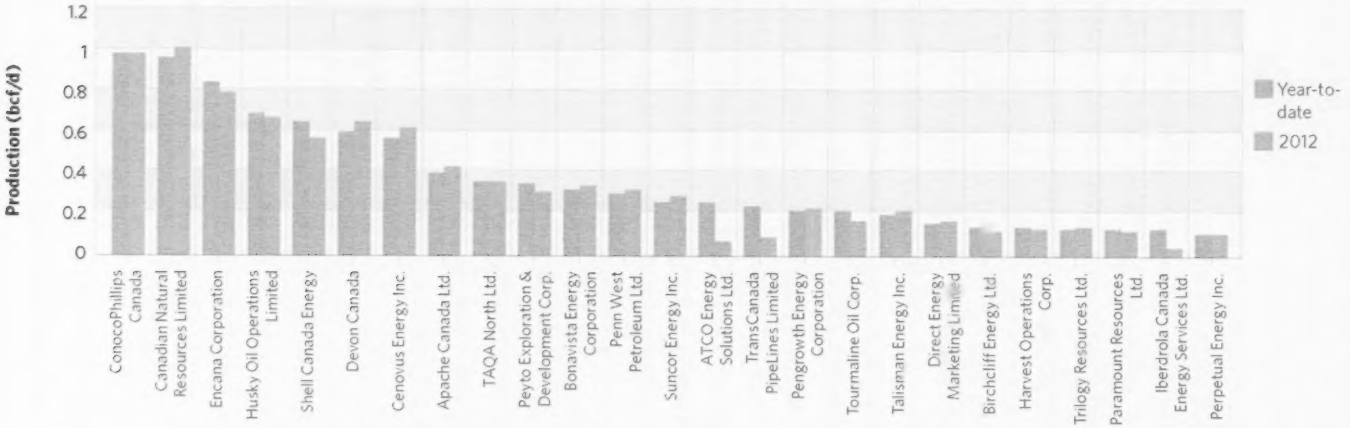
For a glossary of oil and gas terms and other industry information, go to the *Daily Oil Bulletin* toolkit:
http://www.dailyoilbulletin.com/common/toolkit.asp

TOP 25 OIL PRODUCERS IN ALBERTA (AS OF JUNE 13, 2013)

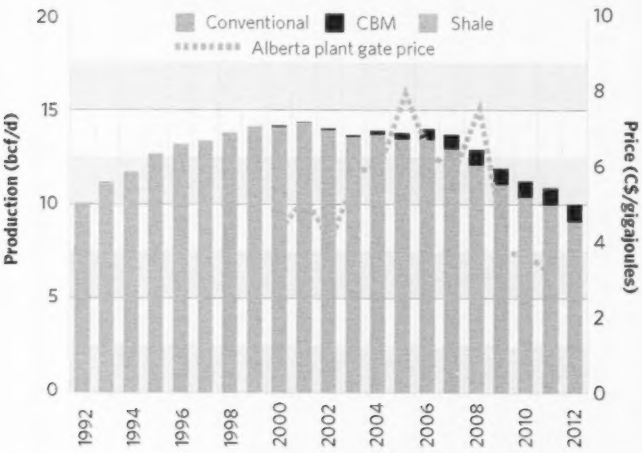


TOP 25 GAS PRODUCERS IN ALBERTA (AS OF JUNE 13, 2012)

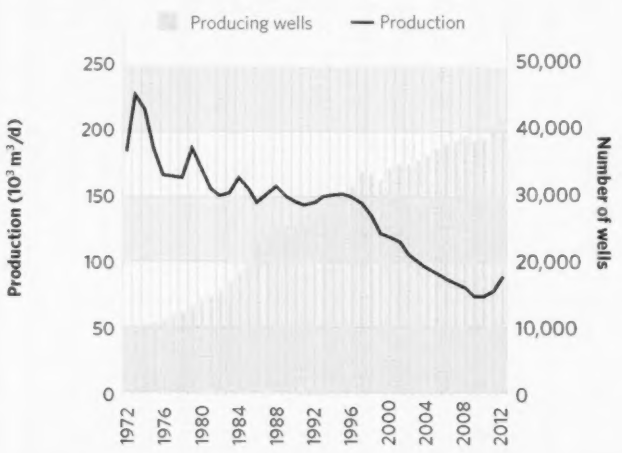
Only gas production reported from oil and gas batteries, gas gathering systems and gas plants is considered. Bitumen facilities, straddle plants and fractionation plants are excluded, as is gas from commercial gas storage schemes.



ALBERTA MARKETABLE GAS PRODUCTION

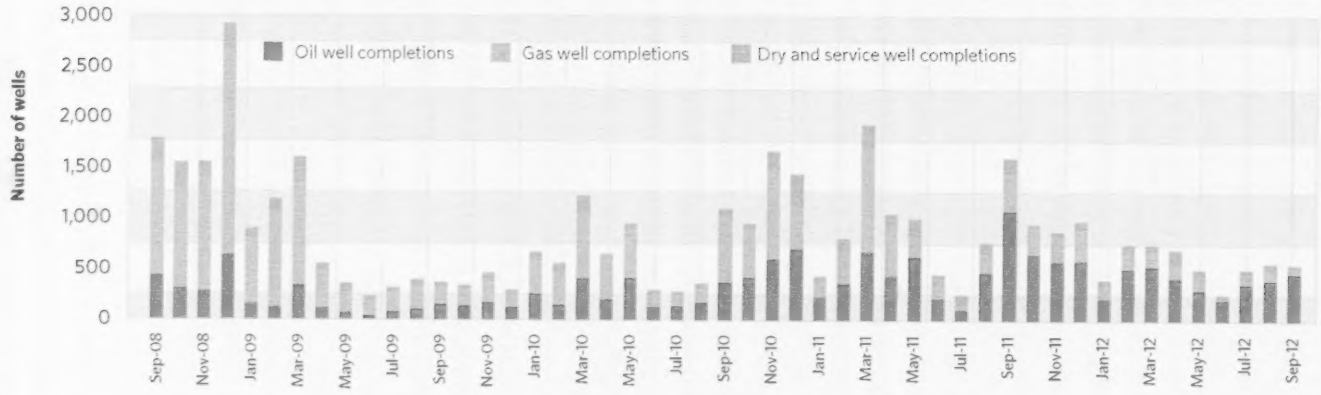


ALBERTA CRUDE OIL PRODUCTION AND PRODUCING WELLS



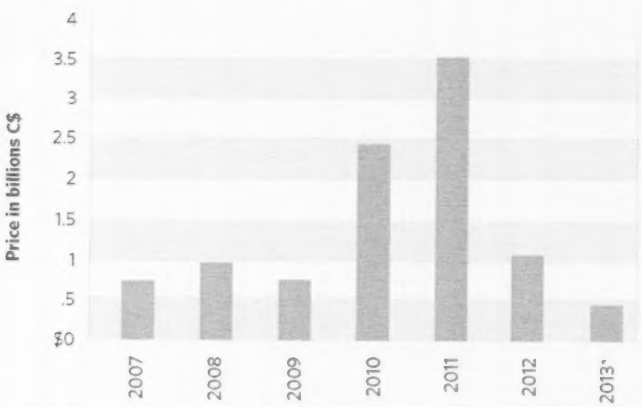
ALBERTA WELL COMPLETIONS

There were 524 well completions in September 2012, down 66 per cent from the 1,531 completions reported in September 2011. To date, there have been 3,301 oil completions, down 18 per cent from the 4,045 oil completions a year ago, and 882 gas completions, down 68 per cent from the 2,787 completions a year ago.



ALBERTA CROWN LAND SALES

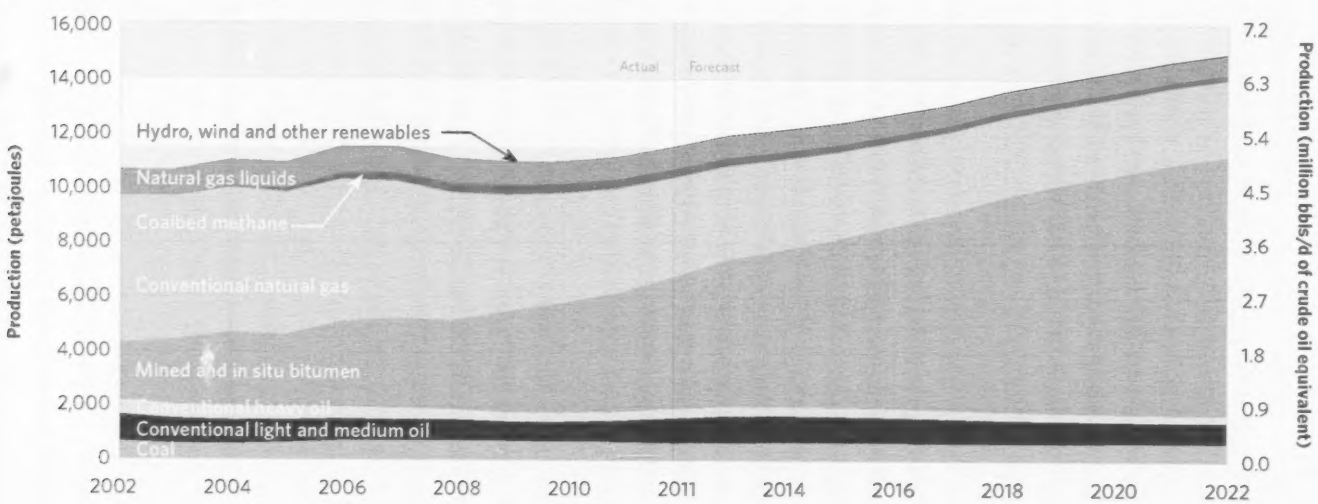
P&NG rights, excluding oil sands



WELL DEPTHS

	GAS			OIL		
	Total metres	Wells drilled	Av. well depths (m)	Total metres	Wells drilled	Av. well depths (m)
2007	10,756,598	9,628	1,117	4,080,460	3,059	1,334
2008	9,517,507	7,886	1,207	3,931,655	2,890	1,360
2009	4,764,321	3,400	1,401	2,501,875	1,848	1,354
2010	6,037,031	3,801	1,588	5,803,292	3,681	1,577
2011	5,005,591	2,185	2,291	8,941,754	5,008	1,785

TOTAL PRIMARY ENERGY PRODUCTION IN ALBERTA



Promising tight oil plays

Alberta's crude oil potential was once thought to be declining—but not anymore. With technological advancements, both conventional fields and new oil-laden fields that were thought to be uncommercial with pre-existing vertical drilling technology are now the hot crude plays in the province. Here's a look at some of the more promising tight oil plays that have been unlocked via horizontal drilling and multistage fracturing technology.

DRAINING THE CARDIUM

Coaxing crude oil out of the ground from the Cardium formation underlying the Pembina oilfield has always been a matter of brute force.

The Pembina #1 discovery well, drilled by Socony-Mobil in the winter of 1953, required a fracture treatment consisting of diesel fuel and 3,000 pounds of sand pumped at 1,800 pounds per square inch of pressure to get oil flowing to the wellbore in commercial quantities.

Almost 60 years later, oil explorers are still at it, cracking sandstone as deep as 9,400 feet beneath the surface in the hopes of striking pay. Only now the wells drilled are horizontal and stretch as far as a mile through the reservoir. Massive fracture treatments consist of 20 tons of sand—more than 12 times as much as was pumped downhole in the Pembina #1—mixed with specialized fluids. And as many as 20 stages are fracture stimulated one after another along the horizontal leg using on average 10,000 horsepower of pumping might.

The size of the prize is huge. The Alberta Energy Resources Conservation Board says the Cardium had 10 billion barrels of original oil in place with around 1.7 billion barrels produced. However, those numbers were derived from

MOST ACTIVE COMPANIES 2012

BEAVERHILL LAKE/ SLAVE POINT CARBONATE

1. Pinecrest Energy Inc.
2. Penn West Petroleum Ltd.
3. Lone Pine Resources Canada Ltd.
4. Second Wave Petroleum Inc.
5. Shell Canada Limited
6. Surge Energy Inc.
7. Dolomite Energy Inc.
8. Border Petroleum Corp.
9. Encana Corporation
10. Mancal Energy Inc.

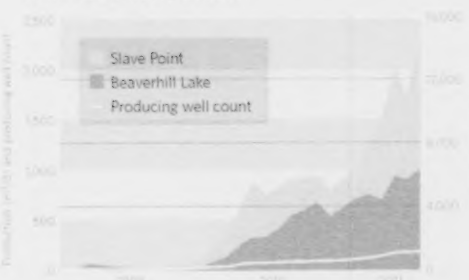
CARDIUM

1. PetroBakken Energy Ltd.
2. Vermilion Energy Inc.
3. Sinopec Daylight Energy Ltd.
4. Whitecap Resources Inc.
5. Spartan Oil Corp.
6. Bellatrix Exploration Ltd.
7. Penn West Petroleum Ltd.
8. ARC Resources Ltd.
9. Pengrowth Energy Corporation
10. Angle Energy Inc.

BEAVERHILL LAKE/SLAVE POINT CARBONATE

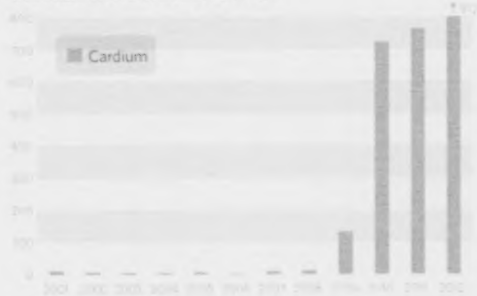
HORIZONTAL WELL LICENCES

TIGHT OIL PRODUCTION

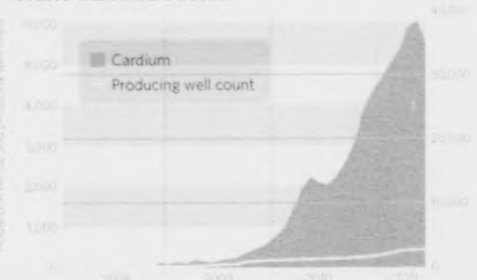


CARDIUM

HORIZONTAL WELL LICENCES



TIGHT OIL PRODUCTION



All data as of November 2011

historical records from vertical drilling in the play. Estimates now suggest the Cardium could contain as much as 15 billion barrels of oil, and expect 20-30 per cent of that oil could ultimately be recovered.

RETURN TO SWAN HILLS

The Beaverhill Lake carbonate play in the Swan Hills north of Edmonton is another hot tight oil play in central Alberta. Home Oil Company originally discovered the North Swan Hills field in 1956. Amoco Corporation and Gulf Oil Corporation discovered the South Swan Hills unit in 1959. Combined, the two fields had around four billion barrels of oil in place.

Producers are using a 14-stage fracture stimulation program with a retrievable multi-fracturing tool that allows full wellbore access later if needed. More and more acid is being pumped in each fracture stage to open up more reservoir. Operators are now injecting as much as 1,200 cubic metres of acid per stage. The acid treatment is custom designed for the formation rock. Jet pumps are being used to enhance cleanup after the fracture stimulation to mitigate any formation damage, and multi-well pads are being used to cut costs and environmental footprints.

PIERCING THE VIKING

Another major play taking shape in central Alberta is in the Colorado Group, in the eastern reaches of the province.

The Viking oil play at Halkirk and Redwater has mainly entered development mode while in other areas it remains in exploration mode. Given the strength of oil prices in this market, the Viking will be targeted by more and more operators providing new well data and evolving the play in the province.

In 2012, WestFire Energy Ltd., which in October 2012 amalgamated with Guide Exploration Ltd. to become Long Run Exploration Ltd., has been the premier Viking player in Alberta. At Redwater, WestFire holds 62 net sections of land. In 2012, the company's Viking wells achieved marked improvement in initial production rates, thanks to its modified completion methods.

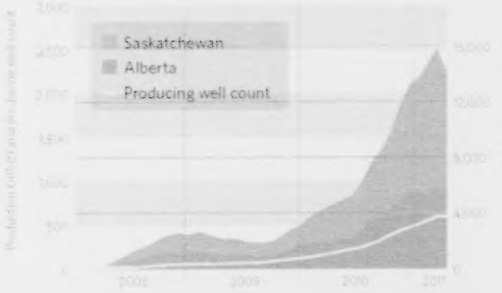
Penn West Petroleum also has a significant position in the Viking oil play. On the Alberta side, production results from the gassy-oil wells drilled in 2012 continue to be encouraging, reports the company. During the year, the company expanded its gas-handling infrastructure to support its active 2013 drilling programs.

Novus Energy Inc. recognizes the vast potential of the Viking, and the company recently amassed 46 net sections of Crown lands prospective for Viking oil in the Provost area of Alberta. Novus believes the assembled acreage meaningfully increases the company's future drilling and development inventory. Drilling on these lands is planned for early 2013. ■

VIKING

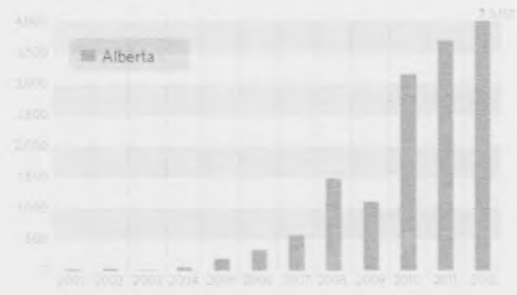
HORIZONTAL WELL LICENCES

TIGHT OIL PRODUCTION

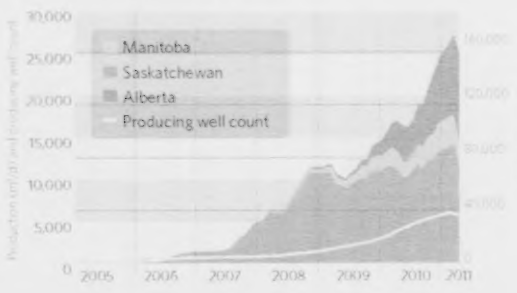


ALBERTA OVERVIEW

HORIZONTAL WELL LICENCES



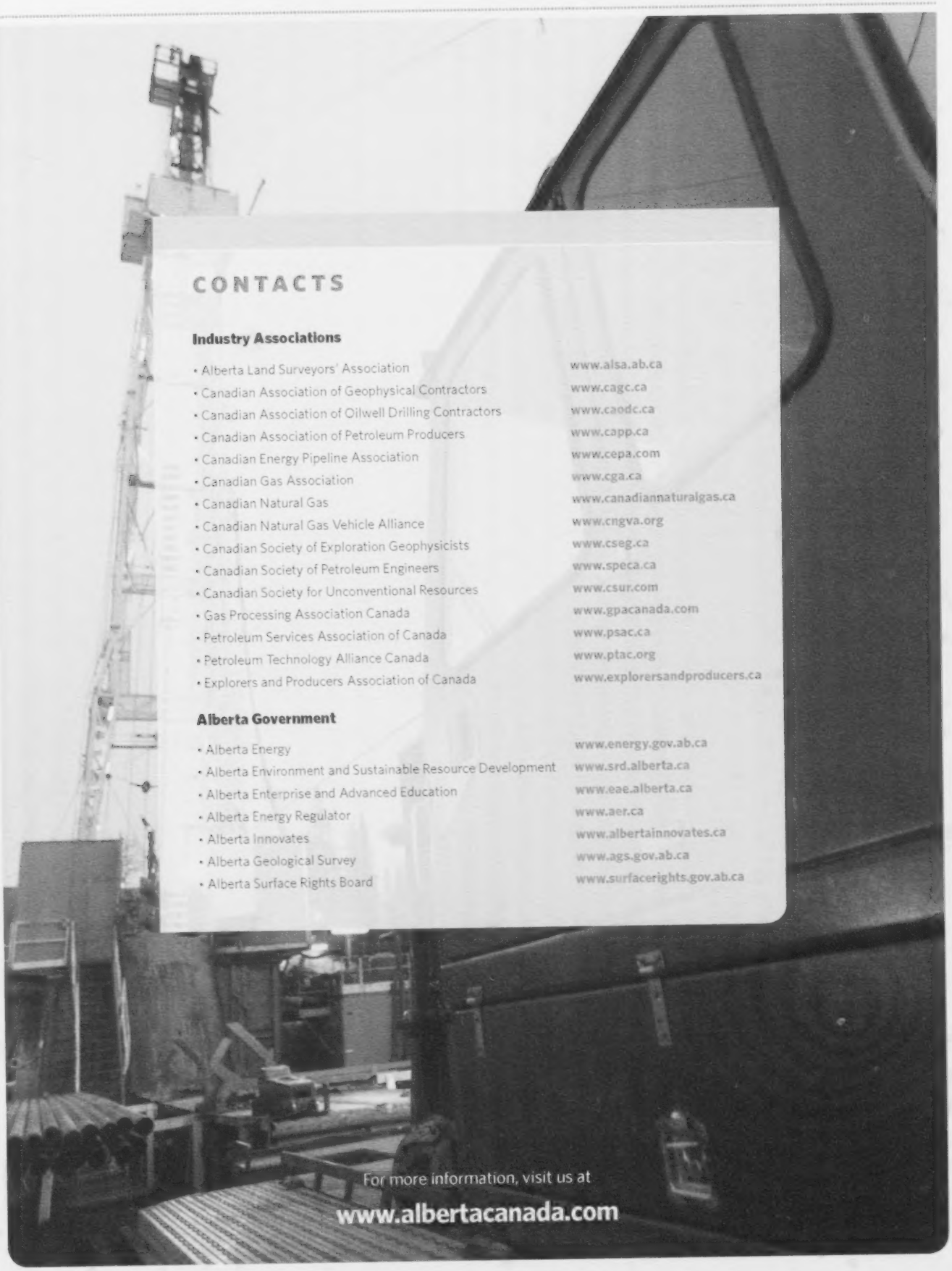
TIGHT OIL PRODUCTION



MOST ACTIVE COMPANIES 2012

VIKING

1. Teine Energy Ltd.
2. Penn West Petroleum Ltd.
3. Polar Star Canadian Oil and Gas Inc.
4. Novus Energy Inc.
5. Raging River Exploration Inc.
6. Whitecap Resources Inc.
7. Pengrowth Energy Corporation
8. Crescent Point Energy Corp.
9. Renegade Petroleum Ltd.
10. Cutpick Energy Inc.



CONTACTS

Industry Associations

• Alberta Land Surveyors' Association	www.alsa.ab.ca
• Canadian Association of Geophysical Contractors	www.cagc.ca
• Canadian Association of Oilwell Drilling Contractors	www.caodc.ca
• Canadian Association of Petroleum Producers	www.capp.ca
• Canadian Energy Pipeline Association	www.cepa.com
• Canadian Gas Association	www.cga.ca
• Canadian Natural Gas	www.canadiannaturalgas.ca
• Canadian Natural Gas Vehicle Alliance	www.cngva.org
• Canadian Society of Exploration Geophysicists	www.cseg.ca
• Canadian Society of Petroleum Engineers	www.speca.ca
• Canadian Society for Unconventional Resources	www.csur.com
• Gas Processing Association Canada	www.gpacanada.com
• Petroleum Services Association of Canada	www.psac.ca
• Petroleum Technology Alliance Canada	www.ptac.org
• Explorers and Producers Association of Canada	www.explorersandproducers.ca

Alberta Government

• Alberta Energy	www.energy.gov.ab.ca
• Alberta Environment and Sustainable Resource Development	www.srd.alberta.ca
• Alberta Enterprise and Advanced Education	www.eae.alberta.ca
• Alberta Energy Regulator	www.aer.ca
• Alberta Innovates	www.albertainnovates.ca
• Alberta Geological Survey	www.ags.gov.ab.ca
• Alberta Surface Rights Board	www.surfacerights.gov.ab.ca

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